

September 2, 2014
(file: 2050)

Ms. Francine Locke, Director
Office of Environmental Management and Services
School District of Philadelphia
440 North Broad Street, 3rd Floor
Philadelphia, PA 19130

**RE: PCB Transformer Removal - Serial No. 3475168
Strawberry Mansion High School
3133 Ridge Avenue
Philadelphia, Pennsylvania 19132**

**KEATING
ENVIRONMENTAL
MANAGEMENT, INC.**

835 Springdale Drive
Suite 200
Exton, PA 19341

610.594.2600 P
610.594.6100 F

keatingenvironmental.com

Dear Francine:



This letter documents the decommissioning and disposal of the polychlorinated biphenyl (PCB) transformer – Serial No. 3475168 from the electrical substation at the Strawberry Mansion High School (SMHS). On-site activities associated with the decommissioning and disposal of this transformer occurred from August 6 – 16, 2014.

Background

**KEATING
ENVIRONMENTAL
MANAGEMENT**

SMHS has been operating the two PCB transformers listed below under a Consent Decree between the School District of Philadelphia (SDP) and the United States Environmental Protection Agency (USEPA) since March 1997.

Environmental,
Energy &
Sustainability
Solutions

PCB Transformer Summary	
Strawberry Mansion High School	
Transformer	Serial Number
Transformer 1	3475167
Transformer 2	3475168

During August of 2014, both PCB transformers were removed from this location. Separate correspondence that addresses the removal and disposal of both transformers is being provided to the SDP.

Transformer Removal

The transformer that is the subject of this correspondence (Serial No. 3475168) was manufactured by Allis Chalmers and contained 3,313 pounds (approximately 255 gallons) of Chlorextol dielectric fluid.

As part of the project associated with the replacement of the PCB transformers, a technical specification that included a description of the environmental requirements for the removal and disposal of the PCB transformers in accordance with the Consent Decree and applicable state and federal regulations was prepared.

A WBE Certified
Corporation



Printed on
recycled paper



A contract for the replacement of the transformers, inclusive of decommissioning and disposal of the PCB transformers at SMHS, was awarded to Car & Duff, Inc. (C&D). C&D subcontracted the draining of the transformers to PSC Industrial Services Division (PSC), and subcontracted the transportation and disposal of the PCB transformers, the dielectric fluid and debris associated with PCB activities to Clean Harbors Environmental Services (Clean Harbors). During the course of the work, C&D removed the drained transformers, oil-filled tote, and other waste containers from the substation and loaded them onto a Clean Harbors' truck. As noted above, Clean Harbors then transported and disposed of the PCB material.

On August 6, 2014, Keating Environmental initiated on-site observation of the decommissioning and removal of the PCB transformer with the Serial No. 3475168.

The following summarizes the primary activities that were completed during the decommissioning of the transformer with the Serial No. 3475168:

August 6, 2014

- Non-PCB stains/discolorations on the substation floor, in the adjacent light well, and the work area outside the building were identified and marked before the work was initiated. No PCB related floor staining was observed prior to August 6, 2014.
- Floor drains in proximity to the work areas were protected. The concrete floor in the work areas were covered with plastic sheeting.
- A 0.5-HP electric transfer pump with associated hosing was used to drain the dielectric fluid from the transformer into one 350-gallon plastic tote. The tote was wrapped and taped with plastic and placed on plastic sheeting in the light well. DOT-approved 55-gallon steel drums were staged inside the substation for personal protection equipment (PPE) and other PCB related waste.
- Initially, a "stinger" pipe was utilized in conjunction with the transfer pump to remove the dielectric fluid from the transformer. The pipe was inserted into the vent hole on top of the transformer, but it was not able to reach the bottom of the transformer (due to internal obstructions). Therefore, the removal of the fluid was then performed by way of the transformer's drain valve.
- Spill pads were placed below the transformer drain valve on top of the plastic and a berm on the floor was created behind the transformer gate valve using spill pads to control any potential releases.
- During the filling of the tote, complications with the pump occurred (i.e. pump over heated and stopped working). A second pump was used and the same complications occurred again. Approximately 75-gallons of dielectric fluid was pumped into the plastic tote. In addition, when Clean Harbors



arrived at the school, they determined that the plastic tote could not be used for the transportation of the PCB dielectric fluid. The plastic sheeting and pads were left on the floor and the transformer, PPE drum, and tote were secured.

August 7, 2014

- PSC utilized a 1.5 HP electric transfer pump and drained the remaining dielectric fluid from the transformer, via the drain valve, into steel bunghole type drums that were placed on plastic sheeting in the substation.
- Since the plastic tote could not be utilized to transport the PCB dielectric fluid, the “stinger” pipe was inserted into the tote and hoses were attached to the pipe and pump. The fluid in the tote was transferred to the steel drums.
- During the transfer of fluid from the tote to the drums, it was discovered that following the removal of the dielectric fluid from the transformer, a small amount of fluid (estimated volume was in terms of “ounces”) contacted the concrete floor below the transformer’s drain valve. The USEPA was notified that day, via email, and an interim cleanup plan was presented for approval and immediately initiated.
- The area of the release was wiped with absorbent pads and a detergent washing of the impacted floor area was performed by PSC. The wiped “smear” area of the release was approximately 2-feet long by 1.5-feet wide and did not appear to reach beneath the footprint area of the transformer. Following the drying of the cleaned area, a gray epoxy encapsulant was applied over the area by PSC, which extended approximately one-foot beyond the edges of the impacted area.
- Five 55-gallon steel bunghole drums were used to contain the approximately 255-gallons of dielectric PCB fluid that was removed from the transformer.
- Absorbent powder was poured into the emptied plastic tote to adsorb any remaining residual fluids. The drums and tote were wrapped in two layers of plastic sheeting inside the substation to be temporarily stored on, which was approved by the SDP.
- The transformer drain valve was secured by taping the plug with electrical tape and wrapping the drain valve with absorbent pads, plastic, and double bagged. The work area was left secured.

August 8, 2014

- An additional layer of tan epoxy encapsulant was applied over the initial layer.¹

August 9, 2014

- C&D laid plastic sheeting in the school’s parking lot between the light well and the Clean Harbors truck. Using a crane, five 55-gallon drums containing

¹ Information regarding the epoxy encapsulant that was used is attached to this letter.





the PCB dielectric fluid and two 55-gallon drums of PPE/debris waste were hoisted out of the light well and placed onto a Clean Harbors truck. The plastic tote was hoisted out of the light well and also placed onto the truck. The truck was equipped with a welded steel pan that provided secondary containment.

- The transformer carcass was raised with jacks then wrapped and taped with plastic sheeting. Truck casters were placed under each corner to assist in moving the transformer toward the light well over the plastic sheeting.
- The carcass was manually moved to the light well and hoisted into the air using the crane in order for it to be placed into a transformer containment sack. The carcass was then hoisted out of the light well using the crane and was placed onto a Clean Harbor's truck.
- The area where the transformer had sat was broom swept and all collected debris was placed into a PCB waste drum. The plastic sheeting and spill pads in the work areas were collected and placed into the waste drums. Drain protectors were left in-place inside the light well and substation pending the removal of the remaining transformer. No new stains were present in the work locations other than the previously mentioned release.
- The drums, tote, and carcass were transported from the site (in two separate shipments due to the size of the truck) on August 9, 2014. The first load consisted of the drums and tote, which were labeled as PCB and manifested under a uniform hazardous waste manifest for transport to a Clean Harbors facility in Twinsburg, Ohio. The second load consisted of an additional drum and the transformer carcass, which were also labeled as PCB and manifested under a uniform hazardous waste manifest. According to Clean Harbors, the dielectric fluid and debris will be transported to a Clean Harbor incinerator in Deer Park, Texas and the carcass will be cleaned and dismantled at a Clean Harbor facility in Coffeyville, Kansas.
- Copies of the uniform hazardous waste manifests showing acceptance of the PCB material at the Twinsburg facility are attached.
- Following the removal of the transformer, to be conservative, on August 9th the tan encapsulated area was extended by approximately one-foot "under" the footprint of the removed transformer.
- An additional top layer of gray colored epoxy encapsulant was applied over the tan area on August 11, 2014.

August 16, 2014

- During the planned electrical shut down of the new transformer at this location, five post encapsulant wipe samples and one field blank were obtained for PCB analysis. The wipe-sample laboratory analytical results were all non-detectable and the laboratory report is attached.



Ms. Francine Locke
School District of Philadelphia
September 2, 2014
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It is specifically noted that no staining was observed on the floor slab beneath the footprint area of the transformer with the Serial No. 3475168 following its removal. However, a small release of PCB fluids was observed on the floor adjacent to it that occurred during the decommissioning and removal of this transformer. As previously noted, that area was remediated, encapsulated, and subject to wipe-sampling, as noted above.

No drilling, coring or abrading of the encapsulated area occurred during the installation of the new transformer. Because PCB-impacted concrete remains at the school, the requirements of the Consent Decree regarding the maintenance and documentation of the encapsulated area are applicable.



A formal "Final Report" regarding the spill area and the remedial measures that were taken will be developed and submitted to USEPA for approval. Additionally, in accordance with the requirements of the Consent Decree, a deed notification, including a "PCB Removal and Disposal Plan" for the recently impacted concrete floor area will be developed and filed with the Recorder of Deeds.

Additional documentation regarding waste disposal/destruction will be provided to the School District when received.

Please contact me if you have any questions or comments.

Regards

KEATING ENVIRONMENTAL MANAGEMENT, INC.

A handwritten signature in blue ink, appearing to read "Keith", is written over the printed name.

Keith Choper, PE, LEED-AP
President

Attachments: Uniform Hazardous Waste Manifests
Photographs
Wipe-Sample Analytical Results
Epoxy Encapsulant Information

Cc: Mr. Jerry Junod
File 5385
File 2050

Uniform Hazardous Waste Manifests

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number 49CFR PART 761	2. Page 1 of 1	3. Emergency Response Phone (800) 473-3718	4. Manifest Tracking Number 007526195 FLE	
5. Generator's Name and Mailing Address of Francis SCHOOL DISTRICT OF PHILADELPHIA ATTN: FRANCIS LOCKE 440 NORTH BROAD STREET, ROOM 3034 PHILADELPHIA, PA 19130			Generator's Site Address (if different than mailing address) STRAWBERRY MANSION HIGH SCHOOL 3133 RIDGE AVENUE PHILADELPHIA, PA 19132			
6. Transporter 1 Company Name CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.			U.S. EPA ID Number MA D 0 3 3 3 2 2 2 5 0			
7. Transporter 2 Company Name			U.S. EPA ID Number			
8. Designated Facility Name and Site Address CLEAN HARBORS PPM, LLC 1675 EAST HIGHLAND ROAD TWINEBURG, OH 44087			U.S. EPA ID Number OH D 9 8 6 8 7 5 3 3 9			
Facility's Phone: (330) 425-3625						
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
		RQ, UN2315, POLYCHLORINATED BIPHENYLS, LIQUID, 9, PG III (PCBS)	001 CM	3091	K	NONE
		RQ, UN2315, POLYCHLORINATED BIPHENYLS, LIQUID, 9, PG III (PCBS)	001 DF	45	K	NONE
14. Special Handling Instructions and Additional Information 1) PPMCHTRM 2) PPMOHS ERG # 171 DATE REMOVED FROM SERVICE FOR DISPOSAL: 8-9-14						
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.						
Generator's/Offor's Printed/Typed Name Agent for School District of Phila. Signature Paul Davis Agent for School District of Phila. Paul Davis Month 8 Day 9 Year 14						
TRANSPORTER	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____		Date leaving U.S.: _____			
	17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name Alex Cauldon Signature Alex Cauldon Month 8 Day 9 Year 14 Transporter 2 Printed/Typed Name _____ Signature _____ Month _____ Day _____ Year _____					
DESIGNATED FACILITY	18. Discrepancy 18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection					
	Manifest Reference Number: _____					
	18b. Alternate Facility (or Generator) U.S. EPA ID Number _____					
	Facility's Phone: _____					
18c. Signature of Alternate Facility (or Generator) _____ Month _____ Day _____ Year _____						
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						
1. _____		2. _____		3. _____		
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a Printed/Typed Name Luciana Ross Signature Luciana Ross Month 08 Day 11 Year 14						

40211879-880

****Each Unit Must Be Marked On Sheet With All Corresponding Information Filled In****

Pg 1 of 1

MANIFEST 007526195FLE

UNIT TYPES:

Phase

MATERIAL TYPE:

TRANSFORMER TYPE:

**POLE
PAD
SUBSTATION**

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number 40CFR PART 761		2. Page 1 of 1	3. Emergency Response Phone (800) 473-3718		4. Manifest Tracking Number 007526201 FLE		
		5. Generator's Name and Mailing Address SCHOOL DISTRICT OF PHILADELPHIA ATTN: FRANCIS LOCKE 440 NORTH BROAD STREET, ROOM 3034 PHILADELPHIA, PA 19130				Generator's Site Address (if different than mailing address) STRAWBERRY MANSION HIGH SCHOOL 3133 RIDGE AVENUE PHILADELPHIA, PA 19132			
6. Transporter 1 Company Name CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.		U.S. EPA ID Number MA0839322250							
7. Transporter 2 Company Name		U.S. EPA ID Number							
8. Designated Facility Name and Site Address CLEAN HARBORS PPM, LLC 1675 EAST HIGHLAND ROAD TWINBURG, OH 44087		U.S. EPA ID Number OH D986875339							
Facility's Phone: (330) 425-3825									
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))			10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
		RQ UN2815, POLYCHLORINATED BIPHENYLS, LIQUID, 9, PG III (PCBS) 22			005 DM		1556	K	NONE
		RQ UN2815, POLYCHLORINATED BIPHENYLS, LIQUID, 9, PG III (PCBS)			005 DM		1556	K	NONE
		RQ UN3432 Polychlorinated Biphenyls Solid 9, PG III (PCBS)			002 DM		100	K	NONE
		RQ UN3432 Polychlorinated Biphenyls Solid 9, PG III (PCBS)			1 TP		159	K	NONE
14. Special Handling Instructions and Additional Information 1) PPMCHTRH 2) PPMCHS ERG # 171 DATE REMOVED FROM SERVICE FOR DISPOSAL: 8/9/14 3) PPMCHSL 4) PPMCHSL									
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.									
Generator's/Officer's Printed/Typed Name: Paul Davis Agent for School Dist. of Phila. Signature: Paul Davis Agent for Sch. Dist. Phila. Month: 08 Day: 09 Year: 14									
INT'L	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:								
	17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name: Alex Cauldon Signature: Alex Cauldon Month: 08 Day: 09 Year: 14 Transporter 2 Printed/Typed Name: Signature: Month: Day: Year:								
TRANSPORTER	18. Discrepancy								
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Manifest Reference Number: U.S. EPA ID Number:								
DESIGNATED FACILITY	18b. Alternate Facility (or Generator) U.S. EPA ID Number:								
	Facility's Phone: Month: Day: Year:								
	18c. Signature of Alternate Facility (or Generator) Month: Day: Year:								
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)									
1. 2. 3. 4.									
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Printed/Typed Name: Luciana Ross Signature: Luciana Ross Month: 08 Day: 06 Year: 14									

40212494 -501

****Each Unit Must Be Marked On Sheet With All Corresponding Information Filled In****

****THIS PAGE MUST MATCH THE MANIFEST IT ACCOMPANIES**AND MUST ACCOMPANY ALL MANIFESTS**

Pg ____ of ____

MANIFEST 007526201 FLE

[illegible]

Phase

Single Phase
Three Phase

SWITCH	OCB
BUSHING	OIL
CAPACITOR	TRANSFORMER

TRANSFORMER TYPE:

POLE
PAD
SUBSTATION

Photographs

Transformer No. 3475168



Photo 1 – Transformer No. 3475168 Nameplate.



Photo 2 – Transformer No. 3475168 prior to removal activities.

Signature: *Paul M. Dain*

Photograph Documentation

Date: 8/06/2014

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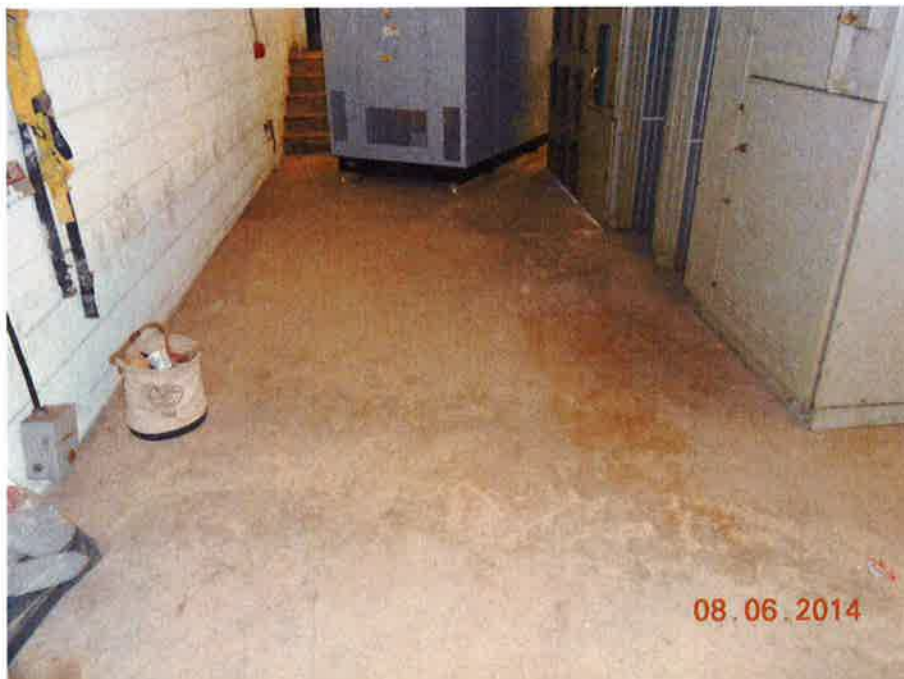


Photo 3 – Transformer No. 3475168 prior to PCB oil removal.



Photo 4 – Transformer No. 3475168 during PCB oil removal.

Signature: Paul M. Durr

Date: 8/06/2014



Photo 5 – Transformer No. 3475168 area of release (indicated in red).



Photo 6 – Transformer No. 3475168 – following detergent cleaning of floor and initial layer of gray epoxy encapsulant.

Signature: Paul M. Deen

Date: 8/07/2014



Photo 7 – Transformer No. 3475168 following removal of transformer.



Photo 8 – Transformer No. 3475168. Tan epoxy encapsulant “lower” layer.

Signature: Paul M. Derr

Date: 8/09/2014

Photograph Documentation

Page 4 of 5



Photo 9 – Transformer No. 3475168. Gray epoxy encapsulant “top” layer.



Photo 10 – Transformer No. 3475168. Post encapsulant PCB wipe sampling locations (wipe sample No. 5 is obscured from view).

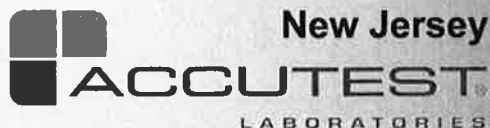
Signature: Paul M. Durr

Date: 8/16/2014

Photograph Documentation

Page 5 of 5

Wipe-Sample Analytical Results



08/28/14

Technical Report for

KEM Partners, Inc.

Strawberry Mansion High School, Philadelphia, PA

K2050

Accutest Job Number: JB74433

Sampling Date: 08/16/14

Report to:

KEM Partners, Inc.
835 Springdale Drive Suite 200
Exton, PA 19341
KChoper@KemPartners.com

ATTN: Keith Choper

Total number of pages in report: 14



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

A handwritten signature in cursive script that reads 'Nancy F. Cole'.

Nancy Cole
Laboratory Director

Client Service contact: Kelly Patterson 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, DE, FL, IL, IN, KS, KY, LA, MA, MD, MI, MT, NC, OH VAP (CL0056), PA, RI, SC, TN, VA, WV, DoD ELAP (L-A-B L2248)

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Test results relate only to samples analyzed.

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Sample Summary

KEM Partners, Inc.

Job No: JB74433

Strawberry Mansion High School, Philadelphia, PA
Project No: K2050

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
JB74433-1	08/16/14	07:00 PD	08/19/14	WIPE Wipe Sample	SM-PE-W1
JB74433-2	08/16/14	07:05 PD	08/19/14	WIPE Wipe Sample	SM-PE-W2
JB74433-3	08/16/14	07:10 PD	08/19/14	WIPE Wipe Sample	SM-PE-W3
JB74433-4	08/16/14	07:15 PD	08/19/14	WIPE Wipe Sample	SM-PE-W4
JB74433-5	08/16/14	07:20 PD	08/19/14	WIPE Wipe Sample	SM-PE-W5
JB74433-6	08/16/14	07:25 PD	08/19/14	WIPE Wipe Sample	SM-PE-FB

Summary of Hits

Page 1 of 1

Job Number: JB74433
Account: KEM Partners, Inc.
Project: Strawberry Mansion High School, Philadelphia, PA
Collected: 08/16/14

2

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
---------------	------------------	-----------------	----	-----	-------	--------

JB74433-1 **SM-PE-W1**

No hits reported in this sample.

JB74433-2 **SM-PE-W2**

No hits reported in this sample.

JB74433-3 **SM-PE-W3**

No hits reported in this sample.

JB74433-4 **SM-PE-W4**

No hits reported in this sample.

JB74433-5 **SM-PE-W5**

No hits reported in this sample.

JB74433-6 **SM-PE-FB**

No hits reported in this sample.



Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SM-PE-W1	Date Sampled:	08/16/14
Lab Sample ID:	JB74433-1	Date Received:	08/19/14
Matrix:	WIPE - Wipe Sample	Percent Solids:	n/a
Method:	SW846 8082 SW846 3550C		
Project:	Strawberry Mansion High School, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G30984.D	1	08/27/14	AP	08/25/14	OP77491	G5G792
Run #2							

	Initial Weight	Final Volume
Run #1	1.0 wipes	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.50	0.20	ug/wipe	
11104-28-2	Aroclor 1221	ND	0.50	0.13	ug/wipe	
11141-16-5	Aroclor 1232	ND	0.50	0.18	ug/wipe	
53469-21-9	Aroclor 1242	ND	0.50	0.21	ug/wipe	
12672-29-6	Aroclor 1248	ND	0.50	0.042	ug/wipe	
11097-69-1	Aroclor 1254	ND	0.50	0.089	ug/wipe	
11096-82-5	Aroclor 1260	ND	0.50	0.19	ug/wipe	
11100-14-4	Aroclor 1268	ND	0.50		ug/wipe	
37324-23-5	Aroclor 1262	ND	0.50		ug/wipe	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	75%		39-131%
877-09-8	Tetrachloro-m-xylene	74%		39-131%
2051-24-3	Decachlorobiphenyl	87%		33-144%
2051-24-3	Decachlorobiphenyl	81%		33-144%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SM-PE-W2	Date Sampled: 08/16/14
Lab Sample ID: JB74433-2	Date Received: 08/19/14
Matrix: WIPE - Wipe Sample	Percent Solids: n/a
Method: SW846 8082 SW846 3550C	
Project: Strawberry Mansion High School, Philadelphia, PA	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G30985.D	1	08/27/14	AP	08/25/14	OP77491	G5G792
Run #2							

	Initial Weight	Final Volume
Run #1	1.0 wipes	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.50	0.20	ug/wipe	
11104-28-2	Aroclor 1221	ND	0.50	0.13	ug/wipe	
11141-16-5	Aroclor 1232	ND	0.50	0.18	ug/wipe	
53469-21-9	Aroclor 1242	ND	0.50	0.21	ug/wipe	
12672-29-6	Aroclor 1248	ND	0.50	0.042	ug/wipe	
11097-69-1	Aroclor 1254	ND	0.50	0.089	ug/wipe	
11096-82-5	Aroclor 1260	ND	0.50	0.19	ug/wipe	
11100-14-4	Aroclor 1268	ND	0.50		ug/wipe	
37324-23-5	Aroclor 1262	ND	0.50		ug/wipe	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	81%		39-131%
877-09-8	Tetrachloro-m-xylene	82%		39-131%
2051-24-3	Decachlorobiphenyl	83%		33-144%
2051-24-3	Decachlorobiphenyl	79%		33-144%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SM-PE-W3	Date Sampled: 08/16/14
Lab Sample ID: JB74433-3	Date Received: 08/19/14
Matrix: WIPE - Wipe Sample	Percent Solids: n/a
Method: SW846 8082 SW846 3550C	
Project: Strawberry Mansion High School, Philadelphia, PA	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G30986.D	1	08/27/14	AP	08/25/14	OP77491	G5G792
Run #2							

	Initial Weight	Final Volume
Run #1	1.0 wipes	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.50	0.20	ug/wipe	
11104-28-2	Aroclor 1221	ND	0.50	0.13	ug/wipe	
11141-16-5	Aroclor 1232	ND	0.50	0.18	ug/wipe	
53469-21-9	Aroclor 1242	ND	0.50	0.21	ug/wipe	
12672-29-6	Aroclor 1248	ND	0.50	0.042	ug/wipe	
11097-69-1	Aroclor 1254	ND	0.50	0.089	ug/wipe	
11096-82-5	Aroclor 1260	ND	0.50	0.19	ug/wipe	
11100-14-4	Aroclor 1268	ND	0.50		ug/wipe	
37324-23-5	Aroclor 1262	ND	0.50		ug/wipe	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	72%		39-131%
877-09-8	Tetrachloro-m-xylene	72%		39-131%
2051-24-3	Decachlorobiphenyl	85%		33-144%
2051-24-3	Decachlorobiphenyl	81%		33-144%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SM-PE-W4	Date Sampled:	08/16/14
Lab Sample ID:	JB74433-4	Date Received:	08/19/14
Matrix:	WIPE - Wipe Sample	Percent Solids:	n/a
Method:	SW846 8082 SW846 3550C		
Project:	Strawberry Mansion High School, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G30987.D	1	08/27/14	AP	08/25/14	OP77491	G5G792
Run #2							

	Initial Weight	Final Volume
Run #1	1.0 wipes	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.50	0.20	ug/wipe	
11104-28-2	Aroclor 1221	ND	0.50	0.13	ug/wipe	
11141-16-5	Aroclor 1232	ND	0.50	0.18	ug/wipe	
53469-21-9	Aroclor 1242	ND	0.50	0.21	ug/wipe	
12672-29-6	Aroclor 1248	ND	0.50	0.042	ug/wipe	
11097-69-1	Aroclor 1254	ND	0.50	0.089	ug/wipe	
11096-82-5	Aroclor 1260	ND	0.50	0.19	ug/wipe	
11100-14-4	Aroclor 1268	ND	0.50		ug/wipe	
37324-23-5	Aroclor 1262	ND	0.50		ug/wipe	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	78%		39-131%
877-09-8	Tetrachloro-m-xylene	81%		39-131%
2051-24-3	Decachlorobiphenyl	88%		33-144%
2051-24-3	Decachlorobiphenyl	85%		33-144%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SM-PE-W5

Lab Sample ID: JB74433-5

Date Sampled: 08/16/14

Matrix: WIPE - Wipe Sample

Date Received: 08/19/14

Method: SW846 8082 SW846 3550C

Percent Solids: n/a

Project: Strawberry Mansion High School, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G30988.D	1	08/27/14	AP	08/25/14	OP77491	G5G792
Run #2							

	Initial Weight	Final Volume
Run #1	1.0 wipes	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.50	0.20	ug/wipe	
11104-28-2	Aroclor 1221	ND	0.50	0.13	ug/wipe	
11141-16-5	Aroclor 1232	ND	0.50	0.18	ug/wipe	
53469-21-9	Aroclor 1242	ND	0.50	0.21	ug/wipe	
12672-29-6	Aroclor 1248	ND	0.50	0.042	ug/wipe	
11097-69-1	Aroclor 1254	ND	0.50	0.089	ug/wipe	
11096-82-5	Aroclor 1260	ND	0.50	0.19	ug/wipe	
11100-14-4	Aroclor 1268	ND	0.50		ug/wipe	
37324-23-5	Aroclor 1262	ND	0.50		ug/wipe	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	84%		39-131%
877-09-8	Tetrachloro-m-xylene	86%		39-131%
2051-24-3	Decachlorobiphenyl	90%		33-144%
2051-24-3	Decachlorobiphenyl	86%		33-144%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SM-PE-FB	Date Sampled:	08/16/14
Lab Sample ID:	JB74433-6	Date Received:	08/19/14
Matrix:	WIPE - Wipe Sample	Percent Solids:	n/a
Method:	SW846 8082 SW846 3550C		
Project:	Strawberry Mansion High School, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G30989.D	1	08/27/14	AP	08/25/14	OP77491	G5G792
Run #2							

	Initial Weight	Final Volume
Run #1	1.0 wipes	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.50	0.20	ug/wipe	
11104-28-2	Aroclor 1221	ND	0.50	0.13	ug/wipe	
11141-16-5	Aroclor 1232	ND	0.50	0.18	ug/wipe	
53469-21-9	Aroclor 1242	ND	0.50	0.21	ug/wipe	
12672-29-6	Aroclor 1248	ND	0.50	0.042	ug/wipe	
11097-69-1	Aroclor 1254	ND	0.50	0.089	ug/wipe	
11096-82-5	Aroclor 1260	ND	0.50	0.19	ug/wipe	
11100-14-4	Aroclor 1268	ND	0.50		ug/wipe	
37324-23-5	Aroclor 1262	ND	0.50		ug/wipe	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	78%		39-131%
877-09-8	Tetrachloro-m-xylene	81%		39-131%
2051-24-3	Decachlorobiphenyl	83%		33-144%
2051-24-3	Decachlorobiphenyl	79%		33-144%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PED-EX Tracking # _____ Batch/Order Control # _____
Accutest Quote # _____ Accutest Job # **JB74433**

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)										Matrix Codes	
Company Name Keating Environ. Mngmt.		Project Name Strawberry Mansion H.S.												DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WIP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank	
Street Address 835 Springdale Dr. Ste. 200		Street Phila., PA													
City, State, Zip Exton, PA 19341		City, State, Zip Phila., PA													
Project Contact pdavis@kenpartners.com		Project # K2050													
Phone # 610-389-2233		Client Purchase Order # 2050													
Samples (Name(s)) Paul Davis		Project Manager Keith Choper													
Field ID / Point of Collection		Collection		Number of containers										LAB USE ONLY	
Field ID / Point of Collection		Date Time Samples by Matrix # of bottles		PC	NSOL	INCL	HCSD	HCSD	HCSD	HCSD	HCSD	HCSD	HCSD		HCSD
1 SM-PE-W1		8-16-14 0700 PD WP 1													C2472
2 SM-PE-W2		0705 1													
3 SM-PE-W3		0710 1													
4 SM-PE-W4		0715 1													
5 SM-PE-W5		0720 1													
6 SM-PE-FB		0725 1													
Turnaround Time (Business days)		Approved By (Accutest PM): / Date		Data Deliverable Information										Comments / Special Instructions	
<input checked="" type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input type="checkbox"/> Other		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C"		<input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input type="checkbox"/> EDD Format <input type="checkbox"/> Other										School District of Phila. sample pricing PCB - wipe samples Rec'd at Exton Service Center	
Emergency & Rush TJA data available via Lablink		Sample Custody must be documented below each time samples change possession, including courier delivery.													
1 Released by Sampler: [Signature]		Date/Time: 8-16-14/300		Received By: [Signature]		Date/Time: 8/16/14 1155		Received By: [Signature]							
3 Released by Sampler: [Signature]		Date/Time: 8/16/14 1145		Received By: [Signature]		Date/Time: 8/16/14 1145		Received By: [Signature]							
5 Released by Sampler: [Signature]		Date/Time: 8/16/14 1145		Received By: [Signature]		Date/Time: 8/16/14 1145		Received By: [Signature]							
Custody Seal #		Preserved where applicable		On Ice		Quoted Temp									

TB/10

4.1
4

JB74433: Chain of Custody

Page 1 of 2



Accutest Laboratories Sample Receipt Summary

Accutest Job Number: JB74433

Client: _____

Project: _____

Date / Time Received: 8/19/2014

Delivery Method: _____

Airbill #s: _____

Cooler Temps (Initial/Adjusted): #1: (5.5/5.5): 0

Cooler Security

Y or N

1. Custody Seals Present: ☒ ☐
2. Custody Seals Intact: ☒ ☐

Y or N

3. COC Present: ☒ ☐
4. Smpl Dates/Time OK: ☒ ☐

Cooler Temperature

Y or N

1. Temp criteria achieved: ☒ ☐
2. Cooler temp verification: IR Gun
3. Cooler media: Ice (Bag)
4. No. Coolers: 1

Quality Control Preservation

Y or N

N/A

1. Trip Blank present / cooler: ☐ ☒ ☐
2. Trip Blank listed on COC: ☐ ☒ ☐
3. Samples preserved properly: ☒ ☐ ☐
4. VOCs headspace free: ☐ ☐ ☒

Sample Integrity - Documentation

Y or N

1. Sample labels present on bottles: ☒ ☐
2. Container labeling complete: ☒ ☐
3. Sample container label / COC agree: ☒ ☐

Sample Integrity - Condition

Y or N

1. Sample recvd within HT: ☒ ☐
2. All containers accounted for: ☒ ☐
3. Condition of sample: Intact

Sample Integrity - Instructions

Y or N

N/A

1. Analysis requested is clear: ☒ ☐
2. Bottles received for unspecified tests: ☐ ☒
3. Sufficient volume recvd for analysis: ☒ ☐
4. Compositing instructions clear: ☐ ☐ ☒
5. Filtering instructions clear: ☐ ☐ ☒

Comments

Accutest Laboratories
V: 732.329.0200

2235 US Highway 130
F: 732.329.3489

Dayton, New Jersey
www.accutest.com

JB74433: Chain of Custody
Page 2 of 2

Epoxy Encapsulant Information



EPOXYSHIELD® WATER-BASED EPOXY GARAGE FLOOR COATING

DESCRIPTION AND USES

A two component, water-based epoxy floor coating designed for finishing concrete garage floors that are in good sound condition and are free of curing agents and sealers. It is not intended for use on unsound previous coatings or floors that have a moisture problem.

PRODUCTS

251965	Gray Gloss
251966	Tan Gloss
252625	Tint Base Gloss

APPEARANCE

Dries to a gloss finish. Solid base color with a color fleck finish. Available in Gray or Tan colors and a tint base that can be tinted to 32 colors.

PACKAGING

Floor Coating comes as a kit
Part B Base 90 fluid ounces (2.67 liters)
Part A Activator 30 fluid ounces (0.89 liters)
Decorative chips and EPOXYShield® Concrete Etch

PRODUCT APPLICATION

SURFACE PREPARATION

Allow new concrete to cure for a minimum of 28 days. Sweep away all loose dirt and debris. Remove any oil spots, grease or spills and wash the floor with a suitable detergent or degreasing solution and rinse. Then etch the floor using the Concrete Etch.

PREVIOUSLY COATED FLOORS: Make sure the floor is clean and dry. Use a wire brush to remove any loose or peeling paint or stain. If floor is sealed, the sealer will have to be removed by grinding or shot blasting. To ensure proper adhesion, scuff sand the entire surface. **WARNING!** If you scrape, sand or remove old paint, you may release lead dust. **LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE.** Wear a NIOSH-approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting the National Lead Information Hotline at 1-800-424-LEAD or log on to www.epa.gov/lead.

PRODUCT APPLICATION (cont.)

MIXING

Premix both components (Parts A and B) thoroughly to ensure any settled pigment is re-dispersed before adding the activator (Part A) to the base (Part B). It is critical to add all of Part A to B and mix for 3 minutes. Do not mix the color chips in with the coating. Allow the coating to stand before using. See induction period on page 2. Mix again just prior to application. The activated coating must be used within 1-2 hours after the mixing based on temperature.

APPLICATION

Apply only when air, material, and surface temperatures are between 60-85°F (15-29°C) and the surface temperature is at least 5°F (3°C) above the dew point. The relative humidity should not be greater than 85%. After allowing for the induction period, cut in the perimeter of the floor along the wall, or other areas where a roller cannot reach, using a brush or edger before beginning roller application. Use a synthetic ½" nap roller cover on a 9" roller frame to apply an even coat of EPOXYShield® onto the surface. Limit the application to 4x4 foot (1.2x1.2m) sections at a time to make it easier to distribute the colored chips onto the freshly coated surface. Scatter the decorative chips up and away from you so they land flat on the wet paint, then continue on to the next section. Note: Fresh paint can be applied over the loose chips lying outside the previously painted area. Maintain a wet edge to prevent lap marks and gloss differences. Only one coat is necessary under most circumstances. EPOXYShield® must be used within 1 to 2 hours of initial mixing.

CLEAN-UP

Wash tools and equipment with warm water and a mild detergent immediately after use. To remove dried product use lacquer thinner. Clean up drips or spatters IMMEDIATELY with water as dried paint is very difficult to remove. Properly dispose of all soiled rags.



TECHNICAL DATA

EPOXYSHIELD® WATER-BASED EPOXY GARAGE FLOOR COATING

If temp is 60-70°F (16-21°C)

Allow product to stand after mixing

Start brushing (trimming edges): 30 minutes after mixing

Start rolling: 45 minutes after mixing

Use all mixed product within (pot life): 2 hours after mixing

Best time to paint is mid-afternoon (after 1 PM) to ensure best curing conditions and maximum pot life.

If temp is 71-80°F (22-27°C)

Allow product to stand after mixing

Start brushing (trimming edges): 10 minutes after mixing

Start rolling: 15 minutes after mixing

Use all mixed product within (pot life): 1.5 hours after mixing

Best time to paint is early morning (before 9 AM) to ensure best curing conditions and maximum pot life.

If temp is 81-85°F (27-29°C)

Start brushing (trimming edges): Immediately after mixing

Start rolling: 5-15 minutes after mixing

Use all mixed product within (pot life): 1 hour after mixing

Best time to paint is early morning (before 9 AM) to ensure best curing conditions and maximum pot life.

TECHNICAL DATA

EPOXYSHIELD® WATER-BASED EPOXY GARAGE FLOOR COATING

PHYSICAL PROPERTIES

		WATER-BASED EPOXY GARAGE FLOOR COATING
Resin Type		Amine cured epoxy
Pigment Type		Varies with color
Solvents		Ethylene glycol monopropyl ether, Water
Weight*	Per Gallon	10.50-10.60 lbs.
	Per Liter	1.25-1.27 kg
Solids*	By Weight	62.6-63.3%
	By Volume	52.6-52.8%
Volatile Organic Compounds*		<100g/l (0.80 lbs./gal.)
Mixing Ratio		3:1 Base to Activator (by volume)
Recommended Dry Film Thickness (DFT) Per Coat		3.0-3.5 mils (75-87.5μ)
Wet Film to Achieve DFT (Unthinned Material)		6.0-7.0 mils (150-175μ)
Theoretical Coverage at 1 mil DFT (25μ)		844-847 sq.ft./gal. (20.7-20.8 m ² /l)
Practical Coverage at Recommended DFT (assumes 15% material loss)		Approximately 250 sq.ft./kit. (23 m ² /l)
Induction Period		Varies with temperature – See chart in directions
Pot Life @ 70-80°F (21-27°C) and 50% Rel. Hum.		Varies with temperature – See chart in directions
Dry Times at 70-80°F (21-27°C) and 50% Rel. Hum.	Foot Traffic	24 hours
	Vehicle Traffic	3 days
Shelf Life		5 years
Safety Information	Flash Point	205°F (96°C) Activated material
	Contains	—
	Warning!	FOR ADDITIONAL INFORMATION, SEE MSDS.

Calculated values may vary slightly from the actual manufactured material.

*Activated material.

The technical data and suggestions for use contained herein are correct to the best of our knowledge, and offered in good faith. The statements of this literature do not constitute a warranty, express, or implied, as to the performance of these products. As conditions and use of our materials are beyond our control, we can guarantee these products only to conform to our standards of quality, and our liability, if any, will be limited to replacement of defective materials. All technical information is subject to change without notice.

Material Safety Data Sheet

24 Hour Assistance:
1-847-367-7700

1. Identification

Product Name: EPOXY 2GLK GRAY GLS 2.5 GARAGE Kit **Revision Date:** 5/30/2013

Identification Number: 251870

Product Use/Class: Garage Floor Coating/Epoxy Kit

Supplier: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA

Manufacturer: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA

Preparer: Regulatory Department

2. Hazard Identification

EMERGENCY OVERVIEW: Causes eye irritation. Causes skin irritation. May cause allergic skin reaction.

EFFECTS OF OVEREXPOSURE - EYE CONTACT: Extremely irritating to the eyes and may cause severe damage, including blindness. Substance causes severe eye irritation. Injury may be permanent.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.

EFFECTS OF OVEREXPOSURE - INHALATION: High vapor concentrations are irritating to the eyes, nose, throat and lungs.

EFFECTS OF OVEREXPOSURE - INGESTION: Substance may be harmful if swallowed.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: Contains Titanium Dioxide. Titanium Dioxide is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of Titanium Dioxide in the formula. Contains carbon black. Chronic inflammation, lung fibrosis, and lung tumors have been observed in some rats experimentally exposed for long periods of time to excessive concentrations of carbon black and several insoluble fine dust particles. Tumors have not been observed in other animal species (i.e., mouse and hamster) under similar circumstances and study conditions. Epidemiological studies of North American workers show no evidence of clinically significant adverse health effects due to occupational exposure to carbon black.

Carbon black is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC and is proposed to be listed as A4- "not classified as a human carcinogen" by the American Conference of Governmental Industrial Hygienists. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of carbon black in the formula. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage.

PRIMARY ROUTE(S) OF ENTRY: Eye Contact, Ingestion, Inhalation, Skin Absorption, Skin Contact

3. Composition/Information On Ingredients

Chemical Name	CAS-No.	Weight % Less Than	ACGIH TLV- TWA	ACGIH TLV- STEL	OSHA PEL-TWA	OSHA PEL- CEILING
Bisphenol A Epoxy Resin	25085-99-8	20.0	N.E.	N.E.	N.E.	N.E.
Aliphatic Polyamine	MIXTURE	20.0	N.E.	N.E.	N.E.	N.E.
Titanium Dioxide	13463-67-7	15.0	10 mg/m3	N.E.	15 mg/m3 [Total Dust]	N.E.

Ethylene Glycol Monopropyl Ether	2807-30-9	5.0	25 ppm (Skin)	N.E.	N.E.	N.E.
o-Cresyl Glycidyl Ether	2210-79-9	5.0	N.E.	N.E.	N.E.	N.E.
Amorphous Silica	7631-86-9	5.0	N.E.	N.E.	0.8 mg/m3	N.E.
Carbon Black	1333-86-4	1.0	3 mg/m3	N.E.	3.5 mg/m3	N.E.

4. First-aid Measures

FIRST AID - EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention. Do NOT allow rubbing of eyes or keeping eyes closed.

FIRST AID - SKIN CONTACT: Wash skin with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists.

FIRST AID - INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention. Do NOT use mouth-to-mouth resuscitation.

FIRST AID - INGESTION: If swallowed, do not induce vomiting. If victim is conscious and alert, give 2 to 4 cupfuls of water or milk. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. Treat symptomatically and supportively.

5. Fire-fighting Measures

Flash Point, °F 155 (Setaflash)

Extinguishing Media: Alcohol Foam, Carbon Dioxide, Dry Chemical, Water Fog

UNUSUAL FIRE AND EXPLOSION HAZARDS: No Information

SPECIAL FIREFIGHTING PROCEDURES: Water may be used to cool closed containers to prevent buildup of steam. Full protective equipment including self-contained breathing apparatus should be used. Evacuate area and fight fire from a safe distance.

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers.

7. Handling and Storage

HANDLING: Wash thoroughly after handling. Use only in a well-ventilated area. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid contact with eyes, skin and clothing.

STORAGE: Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame.

8. Exposure Controls/Personal Protection

ENGINEERING CONTROLS: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation.

RESPIRATORY PROTECTION: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or in any other circumstances where air purifying respirators may not provide adequate protection.

SKIN PROTECTION: Use gloves to prevent prolonged skin contact. Nitrile or Neoprene gloves may afford adequate skin protection.

EYE PROTECTION: Use safety eyewear designed to protect against splash of liquids.

OTHER PROTECTIVE EQUIPMENT: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

HYGIENIC PRACTICES: Wash thoroughly with soap and water before eating, drinking or smoking. Remove contaminated clothing immediately and launder before reuse.

9. Physical and Chemical Properties

Vapor Density	Heavier than Air	Odor:	Mild
Appearance:	Liquid	Evaporation Rate:	Slower than Ether
Solubility in Water:	Miscible	Freeze Point:	N.D.
Specific Gravity:	1.272	pH:	N.D.
Physical State:	Liquid		

(See section 16 for abbreviation legend)

10. Stability and Reactivity

CONDITIONS TO AVOID: Avoid temperatures above 120 ° F.

INCOMPATIBILITY: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

HAZARDOUS DECOMPOSITION: When heated to decomposition, it emits acrid smoke and irritating fumes.

HAZARDOUS POLYMERIZATION: No Information

STABILITY: No Information

11. Toxicological Information

<u>Chemical Name</u>	<u>LD50</u>	<u>LC50</u>
Bisphenol A Epoxy Resin	N.E.	N.E.
Aliphatic Polyamine	>2000 mg/kg (Rat, Oral)	N.E.
Titanium Dioxide	>7500 mg/kg (Rat, Oral)	N.E.
Ethylene Glycol Monopropyl Ether	3089 mg/kg (Rat)	>2132 ppm (Rat, 6Hr)
o-Cresyl Glycidyl Ether	5800 mg/kg (Rat, Oral)	1220 ppm (Rat, 4Hr)
Amorphous Silica	>7500 mg/kg (Rat)	>250 mg/m3 (Rat, 6Hr)
Carbon Black	>8000 mg/kg (Rat, Oral)	N.E.

12. Ecological Information

ECOLOGICAL INFORMATION: Product is a mixture of listed components.

13. Disposal Information

DISPOSAL INFORMATION: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter waterways, wastewater, soil, storm drains or sewer systems.

14. Transport Information

	Domestic (USDOT)	International (IMDG)	Air (IATA)
Proper Shipping Name:	Not Regulated	Not Regulated	Not Regulated
Hazard Class:	N.A.	N.A.	N.A.
UN Number:	N.A.	N.A.	N.A.
Packing Group:	N.A.	N.A.	N.A.
Limited Quantity:	No	No	No

15. Regulatory Information**U.S. Federal Regulations:****CERCLA - SARA Hazard Category**

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Acute Health Hazard

Sara Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS-No.</u>
Ethylene Glycol Monopropyl Ether	2807-30-9

Toxic Substances Control Act:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA 12(b) components exist in this product.

International Regulations:**CANADIAN WHMIS:**

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

Canadian WHMIS Class: D2A D2B

16. Other Information**HMIS Ratings:**

Health: 2* Flammability: 2 Physical Hazard: 0 Personal Protection: X

NFPA Ratings:

Health: 2 Flammability: 2 Instability: 0

Volatile Organic Compounds, g/L: 92

REASON FOR REVISION: Regulatory Update

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

Rust-Oleum Corporation believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the date of this safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials. Rust-Oleum Corporation makes no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and to comply with all applicable international, federal, state, and local laws and regulations.